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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
CONTINO, PAUL F	

ART UNIT	PAPER NUMBER
2114	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/675,917	JOHNSON ET AL.	
	Examiner	Art Unit	
	PAUL F. CONTINO	2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 August 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-38 and 45-54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *7-10,12-15,25-38 and 51-54* is/are allowed.

6)☒ Claim(s) *11,16-24 and 45-50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION: Non-Final Rejection

Response to Arguments

1. Applicant's arguments with respect to claims 7-38 and 45-54 have been considered but are moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 16-17, 19, 21, 23-25, 45, 46, 48, 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martinez et al. (U.S. Patent No. 6,188,973) in view of Giorgio (U.S. Patent No. 5,905,867).

As in claim 16, Martinez et al. teaches of a computer monitoring and diagnostic system, comprising:

a remote computer configured to provide at least some control of the system *(Fig. 1 #32,34,36; column 11 lines 28-30)*;

one or more server computers in communication with the remote computer and any other server computers *(Figs. 1,2 #24; column 5 lines 12-17, and column 6 line 61 through column 8 line 20, where the shelf containing EMU 28, disk drives 26, and various other computing components is a server)*, at least one of the server computers having a computing device, at least one cooling fan, and a housing *(Figs. 1-4)*;

at least one temperature sensor, located within the at least one server computer, configured to sense temperature conditions within the computer *(column 11 lines 28-39, where a temperature is monitored)*;

at least one fan sensor configured to sense a fan signal of the at least one cooling fan *(Fig. 5; column 7 lines 11-16)*; and

at least one microcontroller, located within the at least one server computer;

wherein the microcontroller is configured to process requests for temperature conditions from the at least one server computer, responsively provide sensed temperature conditions to the computer, and, based at least in part on the sensed temperature conditions, to automatically power down the at least one server computer when the sensed temperature conditions exceed a warning threshold *(Fig. 6; column 5 lines 12-22 and column 11 lines 28-39, where a temperature is monitored and compared to a set point threshold to determine whether or not to power down the system by microcontroller EMU 28)*.

However, Martinez fails to teach of adjusting a fan speed, of explicitly sensing fan speed, or of adjusting a fan speed based on particular speed thresholds. Giorgio teaches increasing fan speed without user input based at least in part on sensed temperature conditions *(column 5 lines 16-35 and column 7 lines 2-4)*. Giorgio also teaches of a microcontroller configured to process requests for fan speeds from at least one server computer, responsively provide sensed fan

speeds to a computer, and based at least in part on the sensed fan speed, increase the speed of the at least one cooling fan without user input when the fan speed is below a fan speed threshold and decrease the speed of the at least one cooling fan without user input when the fan speed is above the fan speed threshold *(column 7 line 53-66, where a set point acts as a threshold for fan speed, and where a fan speed is automatically increased if an updated set point threshold is above a current fan speed, and a fan speed is automatically decreased if an updated set point threshold is below a current fan speed)*.

It would have been obvious to a person skilled in the art at the time the invention was made to have included the fan speed control as taught by Giorgio in the invention of Martinez et al. This would have been obvious because adjusting the fan speed as taught by Giorgio in order to attempt to keep the computer system operating at a safe temperature.

As in claim 17, Martinez et al. teaches of a plurality of canisters and the microcontroller is configured to control power to the canisters *(Figs. 1-4; column 11 lines 32-54 and column 12 lines 27-29, where a shelf contains canisters for the disk drives and EMU; the GUI transmits messages to the EMU in order to control components/canisters of the shelf, such as a power set point value)*.

As in claim 19, Martinez et al. teaches the microcontroller is configured to log conditions to a recording system *(column 7 lines 11-20 and column 11 lines 15-17)*.

As in claim 21, Martinez et al. teaches the microcontroller is configured to control the system power to the at least one server computer *(column 11 lines 32-39, shelf server power control)*.

As in claim 23, Martinez et al. teaches one of the microcontrollers in the microcontroller network is connected to a canister *(Figs. 1-4)*.

As in claim 24, Giorgio teaches of an actuator connected to the microcontroller, wherein the actuator is configured to modify an environmental condition of the computer *(column 7 line 53 through column 8 line 3)*.

As in claim 45, Martinez et al. teaches a computer monitoring and diagnostic system, comprising:

a remote computer configured to provide at least some control of the system *(Fig. 1 #32,34,36; column 11 lines 28-30)*;

one or more server computers in communication with the remote computer and any other server computers *(Figs. 1,2 #24; column 5 lines 12-17, and column 6 line 61 through column 8 line 20, where the shelf containing EMU 28, disk drives 26, and various other computing components is a server)*,at least one of the server computers having a computing device and a housing *(Figs. 1-4)*;

at least one temperature sensor, located within at least one of the server computers, configured to sense temperature conditions within the at least one server computer *(column 7 lines 11-20)*;

at least one cooling group arranged within the housing *(Fig. 4 #56)*; and

at least one microcontroller, located within the at least one server computer, connected to the temperature sensor and the at least one server computer, wherein the microcontroller is configured to process requests for temperature conditions from the computer, responsively provide sensed conditions to the computer, and self-manage conditions of the at least one server computer, wherein the modification is based at least in part on the sensed condition and wherein the microcontroller is configured to induce power down of the at least one server computer when the temperature conditions exceed a warning threshold *(column 11 lines 28-39)*.

However, Martinez fails to teach of modifying the operations of the cooling group without user input. Giorgio teaches modifying the operations of the cooling group without user input based at least in part on the sensed condition *(column 5 lines 16-35 and column 7 lines 2-4, wherein a "cooling group" comprises cooling fan components)*. Giorgio also teaches of a microcontroller configured to process requests for cooling group conditions from at least one server computer, responsively provide cooling group conditions to the at least one server computer, and self-manage cooling group conditions without user input, wherein the microcontroller is configured to increase the speed of the at least one cooling group without user input when the cooling group conditions are within a desired cooling group operating range and to decrease the speed of the at least one cooling group without user input when the cooling group conditions are above the desired group operating range *(column 7 line 53-66, where a set point acts as a range threshold for fan speed, and where a fan speed is automatically increased if an updated set point range threshold is above a current fan speed, and a fan speed is automatically decreased if an updated range set point threshold is below a current fan speed)*.

It would have been obvious to a person skilled in the art at the time the invention was made to have included the fan speed control as taught by Giorgio in the invention of Martinez et al. This would have been obvious because adjusting the fan speed as taught by Giorgio in order to attempt to keep the computer system operating at a safe temperature.

As in claim 46, Martinez et al. teaches of a plurality of canisters and the microcontroller is configured to control power to the canisters *(Figs. 1-4; column 11 lines 32-54 and column 12 lines 27-29, where a shelf contains canisters for the disk drives and EMU; the GUI transmits messages to the EMU in order to control components/canisters of the shelf, such as a power set point value)*.

As in claim 48, Martinez et al. teaches the microcontroller is configured to log conditions to a recording system *(column 7 lines 11-20 and column 11 lines 15-17)*.

As in claim 50, Martinez et al. teaches the microcontroller is configured to control the system power to the at least one server computer *(column 11 lines 32-39, shelf server power control)*.

* * *

3. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martinez et al. in view of Giorgio, further in view of Holzhauer (U.S. Patent No. 4,479,115).

As in claim 11, Martinez et al. teaches of a computer monitoring and diagnostic system, comprising:

a remote computer configured to provide at least some control of the system *(Fig. 1 #32,34,36; column 11 lines 28-30)*;

one or more server computers in communication with the remote computer and any other server computers *(Figs. 1,2 #24; column 5 lines 12-17, and column 6 line 61 through column 8 line 20, where the shelf containing EMU 28, disk drives 26, and various other computing components is a server)*;

at least one fan detector configured to determine a fan signal of the at least one fan associated with at least one of the server computers *(Fig. 5; column 7 lines 11-16)*; and

at least one sensor, located within at least one of the server computers, configured to sense environmental conditions within the at least one server computer *(column 11 lines 28-39, where a temperature is monitored)*; and

wherein the system compares the environmental conditions indicated by the at least one sensor to a threshold and to automatically power down the at least one server computer when the environmental conditions exceed a warning threshold *(column 11 lines 28-39, where a temperature is monitored and compared to a set point threshold to determine whether or not to power down the system)*.

However, Martinez et al. fails to teach of modification of an environmental condition by an actuator, of explicitly sensing fan speed, or of adjusting a fan speed based on particular speed thresholds. Martinez also fails to teach of indicating a fault when a fan speed is zero. Giorgio teaches of an actuator configured to modify an environmental condition of at least one server computer without user input, the modification based at least in part on the environmental

conditions sensed by the computer, and determines whether the actuator is capable of modification to a higher output level and automatically induces the actuator operate at the higher output level when the threshold is exceeded and the higher output level is available *(column 5 lines 16-35 and column 7 lines 2-4, where a fan is inherently controlled by an actuator to alter its speed in order to modify the operating temperature of the system)*. Giorgio also teaches of comparing a fan speed indicated by at least one fan speed detector to a fan speed threshold, automatically inducing the actuator to operate at a higher output level when the fan speed is below a fan speed threshold and above zero, and automatically induces the actuator to operate at a lower output level when the fan speed is above a fan speed threshold *(column 7 line 53-66, where a set point acts as a threshold for fan speed, and where a fan speed is automatically increased if an updated set point threshold is above a current fan speed, and a fan speed is automatically decreased if an updated set point threshold is below a current fan speed)*. Holzhauer teaches of indicating that a fan has a fault when fan speed is zero *(column 1 lines 14-17)*.

It would have been obvious to a person skilled in the art at the time the invention was made to have included the actuator control as taught by Giorgio in the invention of Martinez et al. This would have been obvious because adjusting the fan speed as taught by Giorgio in order to attempt to keep the computer system operating at a safe temperature.

It would have been obvious to a person skilled in the art at the time the invention was made to have included the zero fan speed fault indication as taught by Holzhauer in the combined invention of Martinez et al. and Giorgio. This would have been obvious because the invention of Holzhauer offers a reliable means of indicating when a fault has occurred with a

cooling fan *(column 1 lines 41-46)*, ultimately indicating and/or preventing faulty operation of an entire operating system.

* * *

4. Claims 20 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martinez et al. in view of Giorgio, further in view of Treu (U.S. Patent No. 5,245,615).

As in claims 20 and 49, the combined invention of Martinez et al. and Giorgio teaches of logging messages. However, the combined invention of Martinez et al. and Giorgio fails to teach of logging messages in non-volatile random access memory. Treu teaches of logging messages in a non-volatile random access memory *(column 2 lines 11-13)*.

It would have been obvious to a person skilled in the art at the time the invention was made to have included the NV-RAM as taught by Treu in the combined invention of Martinez et al. and Giorgio. This would have been obvious because use of a non-volatile random access memory allows for logged data to be stored and accessed efficiently without loss of memory if a system is powered down.

* * *

5. Claims 18 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martinez et al. in view of Giorgio, further in view of Herrman (U.S. Patent No. 5,581,712).

As in claims 18 and 47, the combined invention of Martinez et al. and Giorgio teaches of the microcontroller is configured to control power to a canister *(column 11 lines 32-39, shelf power control)*. However, the combined invention of Martinez et al. and Giorgio fails to teach of controlling power to an individual slot in the canister. Herrman teaches of controlling power to an individual slot *(Fig. 4 #136; column 5 lines 7-15)*.

It would have been obvious to a person skilled in the art at the time the invention was made to have included the individual slot powering as taught by Herrman in the combined invention of Martinez et al. and Giorgio. This would have been obvious because having control over individual slots of a canister as taught by Herrman increases the overall control of a system and utilizes all available stable operating devices while only disabling a particular device or devices *(column 2 lines 42-45)*.

* * *

6. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Martinez et al. in view of Giorgio, further in view of Liddell et al. (U.S. Patent No. 5,627,965).

As in claim 22, the combined invention of Martinez et al. and Giorgio teaches the limitations of claim 16. However, the combined invention of Martinez et al. and Giorgio fails to teach of an I2C bus. Liddell et al. teaches of an I2C bus *(column 24 lines 15-17)*.

It would have been obvious to a person skilled in the art at the time the invention was made to have included the I2C bus as taught by Liddell et al. in the combined invention of Martinez et al. and Giorgio. This would have been obvious because the use of the well-known in

the art I2C bus as taught by Liddell et al. allows for a reconfigurable multi-processor operating environment to continually operate upon occurrence of a fault in a single processor *(column 24 lines 6-17)*.

Allowable Subject Matter

7. Claims 7-10, 12-15, 25-38, and 51-54 are allowed.

8. The following is a statement of reasons for the indication of allowable subject matter:

As in the allowable independent claims, the inclusion of the limitations involving adjusting environmental condition controls to "high" or "low" settings in response to an observed desired range or threshold, when read within the remainder of the limitations of the claims, makes the independent claims, and their respective dependent claims, allowable over the prior art.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL F. CONTINO whose telephone number is (571)272-3657. The examiner can normally be reached on Monday-Friday 9:00 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be reached on (571) 272-3644. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Paul F. Contino/
3 September 2008
Patent Examiner
AU 2114